Remarks

The Applicants have amended Claims 26, 27, and 34. The Applicants have not added or cancelled any claims. Thus, Claims 24-46 remain pending.

The amendment to Claim 34 serves to correct a typographical error and does not introduce new matter.

Claims 26 and 27 stand objected to due to a misspelling of the word "propagation." The Applicants have corrected the spelling and accordingly request withdrawal of the objection.

Claim 38 stands rejected under 35 USC §102(e) as being anticipated by Wolf. The Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 38 recites an "apparatus for transmitting data on an optical fiber." The apparatus includes multiple monochrome transmitters, each which has its own transmission wavelength and each with a slave clock. The apparatus further includes a multiplexer and a master clock that controls the slave clocks of the transmitters.

Wolf teaches optical and synchronous transmission of electric signals in a network comprised of multiple network elements, such as NE1, NE2, and NE3, for example. Features of network element NE1 are shown with reference to Figure 2 and Paragraph [0019] of Wolf. NE1 includes multiple electrical-to-optical converters E/O1, E/O2, ..., E/On. Each electrical-to-optical converter converts electrical signals being transmitted from NE1 to optical form. To ensure synchronization of the network, an auxiliary channel is created by reserving a particular wavelength, such as λ_1, for the exclusive transmission of synchronization signals. Wolf states that "electrical-to-optical converter E/O1 is supplied with a synchronization clock generated in a primary reference source. The synchronization clock is transmitted to network element NE2 at the reserved wavelength λ_1" (Paragraph [0019]).

The apparatus of Claim 38 is distinct from the system described by Wolf. On Page 3 of the Office Action of April 16, 2008, Wolf's multiple electrical-to-optical converters E/O1, E/O2, ..., E/On with respective wavelengths λ_1, λ_2, ... λ_n are equated to the plurality of monochrome transmitters that are recited in Claim 38. However, each electrical-to-optical converter of Wolf does not include its own local clock, as do the monochrome transmitters of Claim 38. Instead, only one electrical-to-optical converter (E/O1 in the example above) is designated to carry a synchronization clock at its reserved wavelength (λ_1).

Furthermore, the Rejection references Paragraphs [0003] and [0020] as teaching a master clock that controls slave clocks, as is recited in Claim 38. Paragraphs [0003] and [0020] reference the master-slave approach for using wavelengths to transmit information signals. However, there is no teaching by Wolf of a master clock controlling slave clocks in each of multiple transmitters. Thus, the Applicants respectfully request withdrawal of the §102(e) rejection based on Wolf.

Claims 24, 29-32, and 39 stand rejected under 35 USC §103(a) as being unpatentable over Wolf in view of Hait. Claims 25-28 stand rejected under 35 USC §103(a) as being unpatentable over Wolf in view of Hait and further in view of Bosotti. Claims 33-37 and 43-44 stand rejected under 35 USC §103(a) as being unpatentable over Wolf in view of Hait and further in view of Mussino. Claims 40-42 stand rejected under 35 USC §103(a) as being unpatentable over Wolf in view of Mussino. Claim 45 stands rejected under 35 USC §103(a) as being unpatentable over Wolf in view of Takeuchi. Claim 46 stands rejected under 35 USC §103(a) as being unpatentable over Mussino in view of Wolf. The Applicants respectfully request reconsideration and withdrawal of the rejections.

Independent Claim 24 is directed to transmission of data on an optical fiber. Wavelength

signals from monochrome transmitters are multiplexed, information to be transmitted by a carrier realized per channel is modulated, and the multiplexed signal is formatted by an optical gate. Each transmitter has a slave local clock that is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL). The master clock controls the optical gate clock as well as each of the slave local clocks. The phase locked loop (PLL) supplies the synchronization signal for each of the transmitters.

The synchronous transmission described by Wolf varies distinctly in several areas from the data transmission process of Claim 24. On Page 4 of the Office Action of April 16, 2008, Wolf's multiple electrical-to-optical converters E/O1, E/O2, ..., E/On with respective wavelengths λ_1, λ_2, ... λ_n are equated to the plurality of monochrome transmitters that are recited in Claim 24. As is further recited in Claim 24, each transmitter has a slave local clock that "is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL)." However, each electrical-to-optical converter of Wolf does not include its own local clock. Instead, only one electrical-to-optical converter (E/O1 in the example above) is designated to carry a synchronization clock at its reserved wavelength (λ_1). Thus, as each electrical-to-optical converter does not have its own slave local clock, each electrical-to-optical converter cannot be individually controlled by a synchronization circuit with a master clock and a PLL.

Furthermore, in paragraph [0022] of Wolf, as referenced in the Rejection, it is stated that "the synchronization signals received in network element NE2 over the auxiliary channel are converted from optical to electrical form. Electrical evaluation is performed using a PLL, for example." The only mention in Wolf of use of a PLL is for electrical evaluation after the signals are converted to electrical form. In sharp contrast, Claim 24 recites that the master clock

controls "each slave local clock by using said phase locked loop which supplies the synchronization signal for each of the transmitters." There is no mention of the PLL supplying a synchronization signal for each transmitter (or each electrical-to-optical converter) of Wolf.

Hait is cited for the teachings of "modulating information to be transmitted by a carrier realized per channel, and formatting the multiplexed signal by an optical gate." Hait is directed to processing photonic signals. Hait, however, does not remedy the deficiencies noted above with respect to Wolf. In particular, Hait does not teach the features of Claim 24 that recite "a plurality of monochrome transmitters, each of which has its own wavelength and a slave local clock" and "each slave local clock from each transmitter is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL), said master clock controlling the clock of said optical gate and each slave local clock by using said phase locked loop which supplies the synchronization signal for each of the transmitters."

The Applicants respectfully submit that the above differences set forth with respect to Wolf and Hait are such that Wolf and Hait in combination fail to result in a process that contains each and every claimed aspect of the subject matter recited in Claims 24, 29-32, and 39. The combination of Wolf and Hait does not teach at least the features of the monochrome transmitters, each with its own wavelength and slave local clock, and each slave local clock controlled by a synchronization circuit with a master clock and PLL. Thus, withdrawal of the §103(a) rejection of Claims 24, 29-32, and 39 based on the combination of Wolf and Hait is respectfully requested.

Bosotti is cited for the rejection of Claims 25-28 for teaching the features of formatting of data. Bosotti is directed to communication channels that employ optical carriers of different wavelengths. Bosotti does not remedy the deficiencies noted above with respect to the

combination of Wolf and Hait. Bosotti does not teach "a plurality of monochrome transmitters, each of which has its own wavelength and a slave local clock" and "each slave local clock from each transmitter is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL), said master clock controlling the clock of said optical gate and each slave local clock by using said phase locked loop which supplies the synchronization signal for each of the transmitters."

For the rejection of Claims 33-37 and 40-44, Mussino is cited for teaching a frequency marker used to sign the elements of a multiplexer before multiplexing. Mussino is related to optical modulation systems and processes. Mussino does not, however, remedy the deficiencies noted above with respect to Wolf and the combination of Wolf and Hait. Specifically, Mussino does not teach monochrome transmitters, each including its own local clock that are controlled by a master clock. Mussino also does not teach a synchronization circuit that includes a master clock and a PLL, where the master clock controls the clock of an optical gate and each slave local clock by using the PLL.

Takeuchi, in combination with Wolf, is used to support the rejection of Claim 45, which recites "an optical converter, a demultiplexer and a clock connected to at least one of the converters." Takeuchi fails to cure the deficiencies noted above with respect to Wolf and Claim 38. As described above with respect to Claim 38, the electrical-to-optical converters of Wolf do not each include their own local clock, all controlled by a master clock. Takeuchi also fails to disclose this feature.

The Applicants respectfully submit that the above differences set forth with respect to Wolf, Hait, Bosotti, Mussino, and Takeuchi are such that the combinations of Wolf, Hait, and Bosotti; Wolf, Hait, and Mussino; Wolf and Mussino; and Wolf and Takeuchi fail to result in a

process and apparatus that contains each and every claimed aspect of the subject matter recited in Claims 25-28, 33-37, and 40-45. The combinations do not teach at least the features of the monochrome transmitters, each with its own wavelength and slave local clock, and each slave local clock controlled by a synchronization circuit with a master clock and PLL. Thus, withdrawal of the §103(a) rejection of Claims 25-28, 33-37, and 40-45 is respectfully requested.

Independent Claim 46 is directed to a computer-reaction circuit for an apparatus that transmits data on an optical fiber. The computer-reaction circuit includes "a plurality of monochrome transmitters, each of which has its own transmission wavelength, with each transmitter having a slave clock." A frequency marker for injecting a disturbing spectral signal of each transmitter is generated.

Mussino is cited for teaching the generation of a frequency marker for injecting a disturbing spectral signal of a transmitter. Wolf is again cited for the teaching of the plurality of monochrome transmitters, each with its own transmission wavelength and each with its own slave clock. As described above with respect to independent Claims 24 and 38, which also include the feature of the monochrome transmitters, Wolf does not teach a slave clock for each transmitter that has its own transmission wavelength. As described above with respect to Claims 33-37 and 40-44, Mussino does not remedy this deficiency of Wolf inasmuch as Mussino does not teach multiple monochrome transmitters, each with its own transmission wavelength and each with its own slave clock.

The Applicants respectfully submit that the above differences set forth with respect to Mussino and Wolf are such that Mussino and Wolf in combination fail to result in an apparatus that contains each and every claimed aspect of the subject matter recited in Claim 46. The combination of Mussino and Wolf does not teach at least the features of the monochrome

transmitters, each with its own wavelength and slave local clock. Thus, withdrawal of the §103(a) rejection of Claim 46 based on the combination of Mussino and Wolf is respectfully requested.

In view of the foregoing, the Applicants submit that the entire Application is now in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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